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FEE TRANSMITTAL for FY 2004

Effective 10/01/2003. Patent fees are subject to annual revision.

☐ Applicant claims small entity status. See 37 CFR 1.27

TOTAL AMOUNT OF PAYMENT ($) 330.00

Complete if Known	
Application Number	09/683,602
Filing Date	01/24/2002
First Named Inventor	Ronald Hugh Miller
Examiner Name	Mancho, Ronnie M.
Art Unit	3663
Attorney Docket No.	201-0783 (FGT 1538 PA)

METHOD OF PAYMENT *(check all that apply)*

☐ Check ☐ Credit card ☐ Money Order ☐ Other ☐ None

☑ Deposit Account:

Deposit Account Number: 06-1510

Deposit Account Name: Ford Global Technologies, LLC

The Director is authorized to: *(check all that apply)*

☑ Charge fee(s) indicated below ☑ Credit any overpayments

☑ Charge any additional fee(s) or any underpayment of fee(s)

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FEE CALCULATION

1. BASIC FILING FEE

Large Entity Fee Code	Large Entity Fee ($)	Small Entity Fee Code	Small Entity Fee ($)	Fee Description	Fee Paid
1001	770	2001	385	Utility filing fee	
1002	340	2002	170	Design filing fee	
1003	530	2003	265	Plant filing fee	
1004	770	2004	385	Reissue filing fee	
1005	160	2005	80	Provisional filing fee	

SUBTOTAL (1) ($)

2. EXTRA CLAIM FEES FOR UTILITY AND REISSUE

	Extra Claims		Fee from below		Fee Paid
Total Claims		-20** =		X	=
Independent Claims		- 3** =		X	=
Multiple Dependent					=

Large Entity Fee Code	Large Entity Fee ($)	Small Entity Fee Code	Small Entity Fee ($)	Fee Description
1202	18	2202	9	Claims in excess of 20
1201	86	2201	43	Independent claims in excess of 3
1203	290	2203	145	Multiple dependent claim, if not paid
1204	86	2204	43	** Reissue independent claims over original patent
1205	18	2205	9	** Reissue claims in excess of 20 and over original patent

SUBTOTAL (2) ($)

**or number previously paid, if greater; For Reissues, see above

FEE CALCULATION (continued)

3. ADDITIONAL FEES

Large Entity Fee Code	Large Entity Fee ($)	Small Entity Fee Code	Small Entity Fee ($)	Fee Description	Fee Paid
1051	130	2051	65	Surcharge - late filing fee or oath	
1052	50	2052	25	Surcharge - late provisional filing fee or cover sheet	
1053	130	1053	130	Non-English specification	
1812	2,520	1812	2,520	For filing a request for *ex parte* reexamination	
1804	920*	1804	920*	Requesting publication of SIR prior to Examiner action	
1805	1,840*	1805	1,840*	Requesting publication of SIR after Examiner action	
1251	110	2251	55	Extension for reply within first month	
1252	420	2252	210	Extension for reply within second month	
1253	950	2253	475	Extension for reply within third month	
1254	1,480	2254	740	Extension for reply within fourth month	
1255	2,010	2255	1,005	Extension for reply within fifth month	
1401	330	2401	165	Notice of Appeal	
1402	330	2402	165	Filing a brief in support of an appeal	330.00
1403	290	2403	145	Request for oral hearing	
1451	1,510	1451	1,510	Petition to institute a public use proceeding	
1452	110	2452	55	Petition to revive - unavoidable	
1453	1,330	2453	665	Petition to revive - unintentional	
1501	1,330	2501	665	Utility issue fee (or reissue)	
1502	480	2502	240	Design issue fee	
1503	640	2503	320	Plant issue fee	
1460	130	1460	130	Petitions to the Commissioner	
1807	50	1807	50	Processing fee under 37 CFR 1.17(q)	
1806	180	1806	180	Submission of Information Disclosure Stmt	
8021	40	8021	40	Recording each patent assignment per property (times number of properties)	
1809	770	2809	385	Filing a submission after final rejection (37 CFR 1.129(a))	
1810	770	2810	385	For each additional invention to be examined (37 CFR 1.129(b))	
1801	770	2801	385	Request for Continued Examination (RCE)	
1802	900	1802	900	Request for expedited examination of a design application	

Other fee (specify) _____

*Reduced by Basic Filing Fee Paid

SUBTOTAL (3) ($) 330.00

SUBMITTED BY				(Complete *(if applicable)*)	
Name (Print/Type)	Kevin G. Mierzwa	*Registration No. (Attorney/Agent)*	38,049	*Telephone*	248-223-9500
Signature				*Date*	8/20/04

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AF/3663
IFW

PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

In Re Application of

Ronald Hugh Miller

Group Art Unit: 3663

Serial No.: 09/683,602

Examiner: Mancho, Ronnie M.

Filed: 01/24/2002

For: METHOD AND APPARATUS FOR ACTIVATING A CRASH COUNTERMEASURE

Attorney Docket No.: 201-0783 (FGT 1538 PA)

CERTIFICATE OF MAILING/TRANSMISSION (37 C.F.R. § 1.8(a))

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Date: 8/20/04

Kevin G. Mierzwa

BRIEF ON APPEAL

Mail Stop Appeal Brief – Patents
Commissioner for Patents
Box 1450
Alexandria, VA 22313-1450

Sir:

The following Appeal Brief is submitted pursuant to the Notice of Appeal filed on June 24, 2004, for the above-identified application.

08/24/2004 EAREGAY1 00000130 061510 09683602

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I. Real Party in Interest

The real party in interest in this matter is Ford Global Technologies, LLC which is a wholly owned subsidiary of Ford Motor Company both in Dearborn, Michigan (hereinafter "Ford").

II. Related Appeals and Interferences

There are no other known appeals or interferences which will directly affect or be directly affected by or have bearing on the Board's decision in the pending appeal.

III. Status of the Claims

Claims 1-23 stand rejected in the Final Office Action. A copy of the claims on appeal is attached as an Appendix.

IV. Status of Amendments Filed After Final

There have been no amendments filed subsequent to the final rejection.

V. Summary of the Invention

Claims 1, 14 and 21 are independent claims. Claims 1 and 14 are method claims and claim 21 is a system claim.

Claim 1 is directed to a method of operating a pre-crash sensing system. The steps are best illustrated in Figure 7, which shows generating an object detection signal over a field of view 104 from a first vehicle 100. The vehicle 98 receives the object detection signal when positioned within the field of view. The steps of claim 1 further include generating a response signal in response to the object detection signal. The response signal includes a key. The method further includes establishing a communication link between the first vehicle and the second vehicle using a key and communicating a first vehicle data signal to the second vehicle using said key and communicating a second vehicle data signal to the first vehicle using the key. Thus, a key is used for exchanging signals between the first vehicle and the second vehicle. The key is obtained only when one vehicle is within the field of view of the other vehicle. As described in the specification in paragraph 45, this allows the vehicles to communicate using the key while vehicles not holding the key are excluded from communication.

Claims 14 and 21 also recite the use of the key.

More specifically, Claim 14 recites communicating between two vehicles using a key and the steps of entering the vehicle data into the first vehicle threat registry, and ranking the vehicle data by vehicle within the registry in one of a plurality of classes.

Claim 21 recites a system for sensing a potential collision of a first vehicle with a second vehicle wherein the second vehicle transmits a second vehicle information signal using a key exchanged between the first vehicle and second vehicle. The first vehicle, as is best shown in Figure 1, has a pre-crash sensing system 10 including a threat registry 17, a position sensor 18 generating a first position signal corresponding to a position of the first vehicle, a first sensor generating sensor signals from the first vehicle, a receiver 22 receiving the second vehicle position signal generated from the second vehicle using the key, a countermeasure system 40, and a controller 12 coupled to the threat registry, the position sensor, the first sensor, the receiver, and said counter measure system. The controller determines a time to collision and a distance to collision in response to the second vehicle information, the first position signal and the second vehicle position. The controller determines a threat level as a function of the time to collision and the distance to collision and activating the countermeasure system in response to the threat level and storing the vehicle and threat level in the threat registry.

VI. Issue

The following issue is presented in this appeal:

Whether claims 1-23 are anticipated under 35 U.S.C. §102(b) over *Lemelson* (5,983,161).

VII. Grouping of Claims

The rejected claims have been grouped together by the Examiner in the rejection. The Appellants state, however, that each of the rejected claims stands on its own recitation and is separately patentable for the reasons set forth in detail below.

VIII. Argument

For a proper §102(b) rejection, each and every element must be found in the reference. Appellants respectfully submit that each element is not in the *Lemelson* reference.

By communicating with a key, only vehicles having the key can communicate. That is, vehicles without the key cannot communicate. In the first claim the key is exchanged

for vehicles within the field of view. This prevents too much information being available to users such as described in the *Lemelson* reference. That is, the amount of vehicles exchanging information is reduced from all vehicles to only vehicles with keys. The use of a key is not taught or suggested in the *Lemelson* reference. For a communication key, the Examiner points to Col. 18, lines 30-43. Lines 30-43 are directed to a system that describes using frequency division multiple access, time division multiple access, or code division multiple access in the communication between the two vehicles. These are merely general formats for communication which does not describe that a communication key is exchanged between the vehicles. In addition to a specific format (frequency, time, code) the vehicle needs a key to communicate. Thus, it can only be presumed that the vehicles described in *Lemelson* communicate with all of the other vehicles therearound. Therefore, the *Lemelson* reference does not teach or suggest the use of a communication key.

In response to the above argument the Examiner states,

> "The applicant's[sic] disclose a communication link used for communicating between two vehicles close to each other when a collision is eminent[sic]. The applicant did not further disclose what the key was or what the nature of the key is. Well, as understood in the art of communications and signal processing, the word key is also used in other forms such as keyword, code or codeword, etc. The examiner has interpreted the word, key as known in the art of communications and signal processing. Lemelson et al disclose vehicles in communication using a key such as CDMA, which CDMA is a coded signal also known as a signal carrying a key intended to be received and processed only by receivers which can interpret the key or coded signal. Other vehicles that do not have the key i.e. the code in the signal cannot receive or interpret the signal."

Appellants respectfully disagree with the Examiner's analysis. In the Examiner's interpretation of the communication key, any type of frequency may be determined as a key. Frequency, CDMA and the other types of access described in the *Lemelson* reference are not a key but a general format. It is presumed that each of the vehicles in the network are capable of communication using the proper frequencies and the like. However, they are not enabled to communicate between each other unless a key is present. Appellants respectfully believe that the context of the use of the word key is clear from the specification and goes beyond merely that interpretation provided by the Examiner. As is mentioned in paragraph 9 of the present application, "One advantage of the invention is that by exchanging communication keys, the number of vehicles communicated with are limited and thus more processing resources can be devoted to processing desired vehicles." The key is described in paragraph 45 and states, "A key is exchanged between the first vehicle and the second vehicle. This allows the vehicles to communicate using the key while vehicles not holding the key are excluded from

communication. In a commercial environment, various vehicles may be using the same frequency to communicate and thus, by exchanging the key, only vehicles posing a threat to each other will communicate. By exchanging the key, a communicating link in step 126 is formed." Thus, as can be inferred from the above passage, the vehicles may all communicate on the same frequency but direct communications will only be between vehicles having the same key. Therefore, Appellants respectfully request the Board to reverse the Examiner's rejection since each and every element is not in the *Lemelson* reference.

Claim 2 is dependent upon claim 1 and is believed to be independently patentable. Claim 2 recites further comprising entering the vehicle information from the first data signal into the second vehicle threat registry and classifying a first vehicle information within the registry. This in combination with claim 1 is not taught in the *Lemelson* reference.

Claim 3 depends upon claim 2 and is believed to be independently patentable. Claim 3 further includes wherein classifying comprises classifying the vehicle information as an imminent threat. This in combination with claims 2 and 1 are not taught in the *Lemelson* reference.

Claim 4 is dependent upon claim 3 and recited allocating a system resource in response to the imminent threat. Appellants believe claim 4 is also independently patentable. The recitations of claim 4 in combination with claims 3, 2 and 1 are not taught in the *Lemelson* reference.

Claim 5 depends from claim 1 and is believed to be independently patentable. Claim 5 recites the further step of communicating the second vehicle threat registry to a third vehicle adjacent to the second vehicle. This is shown and described in Fig. 7. This in combination with claim 1 is not taught in the *Lemelson* reference.

Claim 6 is dependent upon claim 1 and is believed to be independently patentable. Claim 6 recites that communicating the first vehicle data signal comprises communicating a first position of the vehicle. This in combination with claim 1 is not taught in the *Lemelson* reference.

Claim 7 depends from claim 1 and is also believed to be independently patentable. Claim 7 recites that communicating a second vehicle data signal comprises communicating a second position of the second vehicle. This in combination with the recitations of claim 1 are not taught in the *Lemelson* reference.

Claim 8 is dependent upon claim 1 and is believed to be independently patentable. Claim 8 recites that communicating a first vehicle data signal comprises communicating a first heading information of the first vehicle. This in combination with the recitations of claim 1 are not taught in the *Lemelson* reference.

Claim 9 is dependent upon claim 1 and is believed to be independently patentable. Claim 9 recites that communicating a second vehicle data signal comprises communicating second heading information of the vehicle. This in combination with the recitations of claim 1 are not taught in the *Lemelson* reference.

Claim 10 is dependent upon claim 1 and is believed to be independently patentable. Claim 10 recites that the step of communicating a first vehicle data signal comprises communicating first trajectory information of the vehicle to the second vehicle. This in combination with claim 1 is not taught in the *Lemelson* reference.

Claim 11 is dependent from claim 1 and recites the further step of classifying a threat level as a function of the first vehicle trajectory. This in combination with claim 1 is not taught in the *Lemelson* reference.

Claim 12 is dependent upon claim 1 and recites the further step of activating a countermeasure system in response to the threat level. This in combination with claim 1 is not taught in the *Lemelson* reference.

Claim 13 is dependent upon claim 1 and recites that the vehicle information comprises heading and speed. This in combination with claim 1 is not taught in the *Lemelson* reference.

Claim 14 is an independent claim and recites the steps of establishing a communication link between the first vehicle and a plurality of vehicles by exchanging a communication key, communicating a vehicle data to the first vehicle from the plurality of vehicles using the key, entering the vehicle data into the first vehicle threat registry, and ranking the vehicle data by vehicle within the registry in one of a plurality of classes. As mentioned above, Appellants respectfully believe that no communication key is described in the *Lemelson* reference. The Examiner points to the Figs. 13-15 in Col. 25, lines 7-67, for the teachings of entering the vehicle data into the first vehicle threat registry and ranking the vehicle data by vehicle within the registry in one of the plurality of classes. Appellants have reviewed Col. 25, lines 7-67, and respectfully believe that no teaching (or suggestion) is provided for a threat registry. Fuzzy associative memory (FAM) is used to determine a membership function 222.

However, Appellants respectfully believe that no registry is taught or suggested in these passages. Claim 14 recites the step of ranking the vehicle data by vehicle within the registry in one of a plurality of classes. Although the vehicles are classified, no registry is believed to be set forth. Thus, because the *Lemelson* reference does not teach a communication key as described above with respect to claim 1 and the registry is also not present, claim 14 is believed to be allowable. Appellants therefore respectfully request the Board to reverse the Examiner's rejection.

Claim 15 depends from claim 14 and recites the further step of ranking vehicle data as an imminent threat. Claim 15 is believed to be independently patentable. Claim 15 in combination with claim 14 is not taught in the *Lemelson* reference.

Claim 16 depends from claim 14 and is believed to be independently patentable. Claim 16 recites the additional step of allocating a system resource in response to the imminent threat. This in combination with claim 14 is not taught in the *Lemelson* reference.

Claim 17 is dependent from claim 14 and recites the further step of estimating a time to impact. This in combination with claim 1 is not taught in the *Lemelson* reference.

Claim 18 depends from claim 14 and is believed to be independently patentable. Claim 18 recites the further step of activating an avoidance countermeasure when the time to impact is greater than a time threshold. This in combination with claim 14 is not taught in the *Lemelson* reference.

Claim 19 is dependent upon claim 14 and is believed to be independently patentable. Claim 19 recites the further step of activating an impact countermeasure when the time to impact is less than a time threshold. This in combination with claim 14 is not taught or suggested in the *Lemelson* reference.

Claim 20 is dependent upon claim 14 and is believed to be independently patentable. Claim 20 recites that generating a vehicle data signal comprises generating a vehicle type signal, a vehicle weight signal, or a vehicle size signal. This in combination with claim 14 is not taught in the *Lemelson* reference.

Claim 21 is directed to a system for sensing a potential collision of a first vehicle with a second vehicle wherein the second vehicle transmits a second vehicle information using a key exchange between the first vehicle and the second vehicle. The first vehicle has a pre-crash sensing system that includes a threat registry, a position sensor generating a first position signal corresponding to the position of the first vehicle, first sensor generating sensor signals

from the first vehicle, a receiver receiving the second vehicle position signal generated from the second vehicle using the key, a countermeasure system, and a controller. The controller determines a time to collision and a distance to collision in response to the second vehicle information, the first position signal and the second vehicle position. The controller determines a threat level as a function of the time to collision and the distance to collision and activates the countermeasure system in response to the threat level and stores the vehicle and the threat level in the threat registry. Claim 21 recites two concepts described above. Claim 21 recites communication keys as set forth in claim 1 above. Claim 21 also recites the threat registry as described above with respect to claim 14. Both of these elements are believed to be missing from the *Lemelson* reference as described above. Therefore, Appellants respectfully request the Board to reverse the Examiner's rejection of claim 21.

Claim 22 is dependent upon claim 21 and recites the controller allocates system resources in response to the threat level. This in combination with claim 21 is not taught or suggested in the *Lemelson* reference.

Claim 23 is dependent upon claim 21 and is believed to be independently patentable. Claim 23 recites that the countermeasure system comprises avoidance countermeasures and mitigation countermeasures. The controller chooses to activate the avoidance countermeasures or mitigation countermeasures in response to the threat level. This in combination with claim 21 is not taught or suggested in the *Lemelson* reference.

IX. Appendix

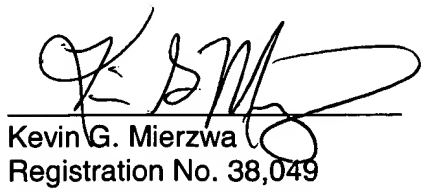
A copy of each of the claims involved in this appeal, namely claims 1-23 is attached hereto as Appendix A.

X. Conclusion

For the foregoing reasons, Appellants respectfully request that the Board direct the Examiner in charge of this examination to withdraw the rejections.

Please charge any fees required in the filing of this appeal to deposit account 06-1510 or, if there are insufficient funds, to use deposit account 06-1505.

Respectfully submitted,



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Date: 4/20/04

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APPENDIX

1. A method for operating a pre-crash sensing system for a first vehicle proximate a second vehicle a counter-measure system comprising:

generating an object detection signal over a field of view from a first vehicle;

receiving the object detection signal at the second vehicle when positioned within the field of view;

generating a response signal in response to said object detection signal, said response signal including a key;

establishing a communication link between said first vehicle and said second vehicle using said key;

communicating a first vehicle data signal to the second vehicle using said key; and

communicating a second vehicle data signal to the first vehicle using said key.

2. A method as recited in claim 1 further comprising entering first vehicle information from the first vehicle data signal into a second vehicle threat registry and classifying ranking the first vehicle information within the registry.

3. A method as recited in claim 2 wherein classifying comprises classifying the first vehicle information as an imminent threat.

4. A method as recited in claim 3 further comprising allocating a system resource in response to the imminent threat.

5. A method as recited in claim 1 further comprising communicating the second vehicle threat registry to a third vehicle adjacent to the second vehicle.

6. A method as recited in claim 1 wherein communicating a first vehicle data signal comprises communicating a first position of the first vehicle.

7. A method as recited in claim 1 wherein communicating a second vehicle data signal comprises communicating a second position of the second vehicle.

8. A method as recited in claim 1 wherein communicating a first vehicle data signal comprises communicating a first heading information of the first vehicle.

9. A method as recited in claim 1 wherein communicating a second vehicle data signal comprises communicating second heading information of the second vehicle.

10. A method as recited in claim 1 wherein communicating a first vehicle data signal comprises communicating first trajectory information of the first vehicle to the second vehicle.

11. A method as recited in claim 1 further comprising classifying a threat level as a function of the first vehicle trajectory.

12. A method as recited in claim 1 further comprising activating a counter-measure system in response to the threat level.

13. A method as recited in claim 1 wherein said vehicle information comprises heading and speed.

14. A method for operating a pre-crash sensing system for a first vehicle proximate a second vehicle a counter-measure system comprising:

establishing a communication link between said first vehicle and a plurality of vehicles by exchanging a communication key;

communicating a vehicle data to the first vehicle from the plurality of vehicles using the key; and

entering the vehicle data into the first vehicle threat registry;

ranking the vehicle data by vehicle within the registry in one of a plurality of classes.

15. A method as recited in claim 14 further comprising ranking some as the vehicle data as an imminent threat.

16. A method as recited in claim 14 further comprising allocating a system resource in response to the imminent threat.

17. A method as recited in claim 14 further comprising estimating a time to impact.

18. A method as recited in claim 14 further comprising activating an avoidance countermeasure when the time to impact is greater than a time threshold.

19. A method as recited in claim 14 further comprising activating an impact countermeasure when the time to impact is less than a time threshold.

20. A method as recited in claim 14 wherein generating a vehicle data signal comprises generating a vehicle type signal, a vehicle weight signal or a vehicle size signal.

21. A system for sensing a potential collision of a first vehicle with a second vehicle wherein the second vehicle transmits a second vehicle information signal using a key exchanged between the first vehicle and second vehicle, said first vehicle having a pre-crash sensing system comprising:

a threat registry;

a position sensor generating a first position signal corresponding to a position of the first vehicle;

a first sensor generating sensor signals from the first vehicle;

a receiver receiving the second vehicle position signal generated from the second vehicle using the key;

a countermeasure system;

a controller coupled to the threat registry, the position sensor, the first sensor, the receiver, and said counter measure system, said controller determining a time to collision and a distance to collision in response to the second vehicle information, the first position signal and the second vehicle position, said controller determining a threat level as a function of the time to collision and the distance to collision, activating the countermeasure system in response to the threat level and storing the vehicle and threat level in the threat registry.

22. A system as recited in claim 21 wherein said controller comprises system resources, said controller allocating system resources in response to said threat level.

23. A system as recited in claim 21 wherein said counter measure system comprises avoidance countermeasures and mitigation countermeasures, said controller choosing to activate said avoidance countermeasures or mitigation countermeasures in response to said threat level.